

REMARKS

STATUS OF CLAIMS

Claims 1-5 are now pending in this application.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I. Claims 1-4 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fisher (USPN 6,003,787) in view of Dion-Biro (USPN 2,808,080).

Claim 5 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fisher in view of Dion-Biro, as applied to claim 1, and further in view of Stonecipher (USPN 2,657,166).

II. The rejections are respectfully traversed.

The courtesy of the interview conducted on May 22, 2007 is acknowledged and appreciated.

Independent claim 1 recites:

A sterilizing and disinfecting apparatus for spraying a sterilizing and disinfecting chemical including alcohol into a target space, comprising:

- a spray gun having an end nozzle;
- a chemical container containing the chemical, attached to said spray gun;
- a gas cylinder filled with a compressed carbon dioxide gas as a carrier gas;
- a pressure reducing valve, attached near an outlet of said gas cylinder, for decompressing the gas discharged from the outlet to a predetermined pressure;
- and
- a gas hose directly connected to the pressure reducing valve and the spray gun,

wherein the spray gun sprays the chemical into the target space by a function of the carrier gas injected from the end nozzle, and wherein the spray gun, the end nozzle and the gas hose are set to have dimensions that permit a feed rate of the gas that does not cause said carbon dioxide gas to freeze due to decompressing in the pressure reducing valve during continuous spray for at least 15 minutes.

In the Office Action, the Examiner advises that Dion-Biro “has been relied upon to teach that it is well known that carbon dioxide gas is in a liquid state when under pressure and furthermore, the use of a pressure reducing valve connected to the carbon dioxide tank controls the gas release and avoids freezing of the gas” (see page 3, lines 13-16 of the Office Action). However, as noted at the above-mentioned interview, if the pressure-reducing valve 13 of Dion-Biro were used in the arrangement of Fisher, a problem of freezing would occur, as discussed at column 1, lines 51-62 of Dion-Biro.

In this regard, it should be noted that an objective of the arrangement of Dion-Biro is to prevent this freezing of the pressure-reducing valve from occurring by providing an arrangement that assures that when gas from cylinder 11 is allowed through pressure-reducing valve 13, the pressure at the outlet of the valve is higher than atmospheric pressure (see column 2, lines 47-51). Thus, a person of ordinary skill in the art would not just use the pressure-reducing valve 13 of Dion-Biro in the arrangement of Fisher as just using the pressure-reducing valve would result in the freezing problem discussed in Dion-Biro. To address the freezing problem, the arrangement disclosed in Dion-Biro is required to be present to prevent freezing since this is the reason for providing the disclosed arrangement.

However, the manner of operation of the arrangement of Dion-Biro is substantially different from that of Fisher. In Dion-Biro carbon dioxide gas is NOT used as a carrier gas. More specifically, in the apparatus of Dion-Biro, carbon dioxide gas is supplied to the upper part of the reservoir 1 via the pressure reducing valve 13 and the conduit 14, and is used for compressing the substance contained in the reservoir 1 from the upper part. By compressing, the substance is forced out to the hose 3 that is connected to the lower part of the reservoir 1, and

further ejected from a nozzle, which is not shown in the figures. At that time, the carbon dioxide gas filled in the cylinder 11 **REMAINS** in the upper space within the reservoir 1 and is **NOT** intended to be delivered from the hose 3 connected to the lower part of the reservoir 1. This is apparent from the fact that the cylinder 11 is smaller than the reservoir 1 in size.

It is unclear, and the Examiner has not explained, how the assembly of Dion-Biro would be used in the arrangement of Fisher to provide a working spray gun. Thus, Applicant submits that a person of ordinary skill in the art would **NOT** use the assembly of Dion-Biro in the arrangement of Fisher given the substantial difference in operation of the arrangement of Dion-Biro from that of Fisher.

In view of the above, independent claim 1 is patentable over Fisher and Dion-Biro, considered alone or in combination, as are dependent claims 2-4. Stonecipher does not remedy the above-noted deficiencies of Fisher and Dion-Biro. Consequently, claim 5 is patentable over Fisher and Dion-Biro also, even when considered in view of Stonecipher. Therefore, the allowance of claims 1-5 is respectfully solicited.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Edward J. Wise (Reg. No. 34,523) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Application No. 10/659,259
Reply to Office Action of February 28, 2007

Docket No.: 1560-0398PUS1

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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